

David P. Petersen
Klarquist, Markman et al
121 SW Taylor Street
Suite 1600
Portland, Oregon 97204
Telephone: 503/226-7391

Our Ref. No. 6420-57079
4,004,798 D 01 11022
For: METHOD AND APPARATUS
GENERATING VALUES
SEMICONDUCTOR WAFER BUMPS
Express Mail No. EL 696104540US
Mailed: January 11, 2002

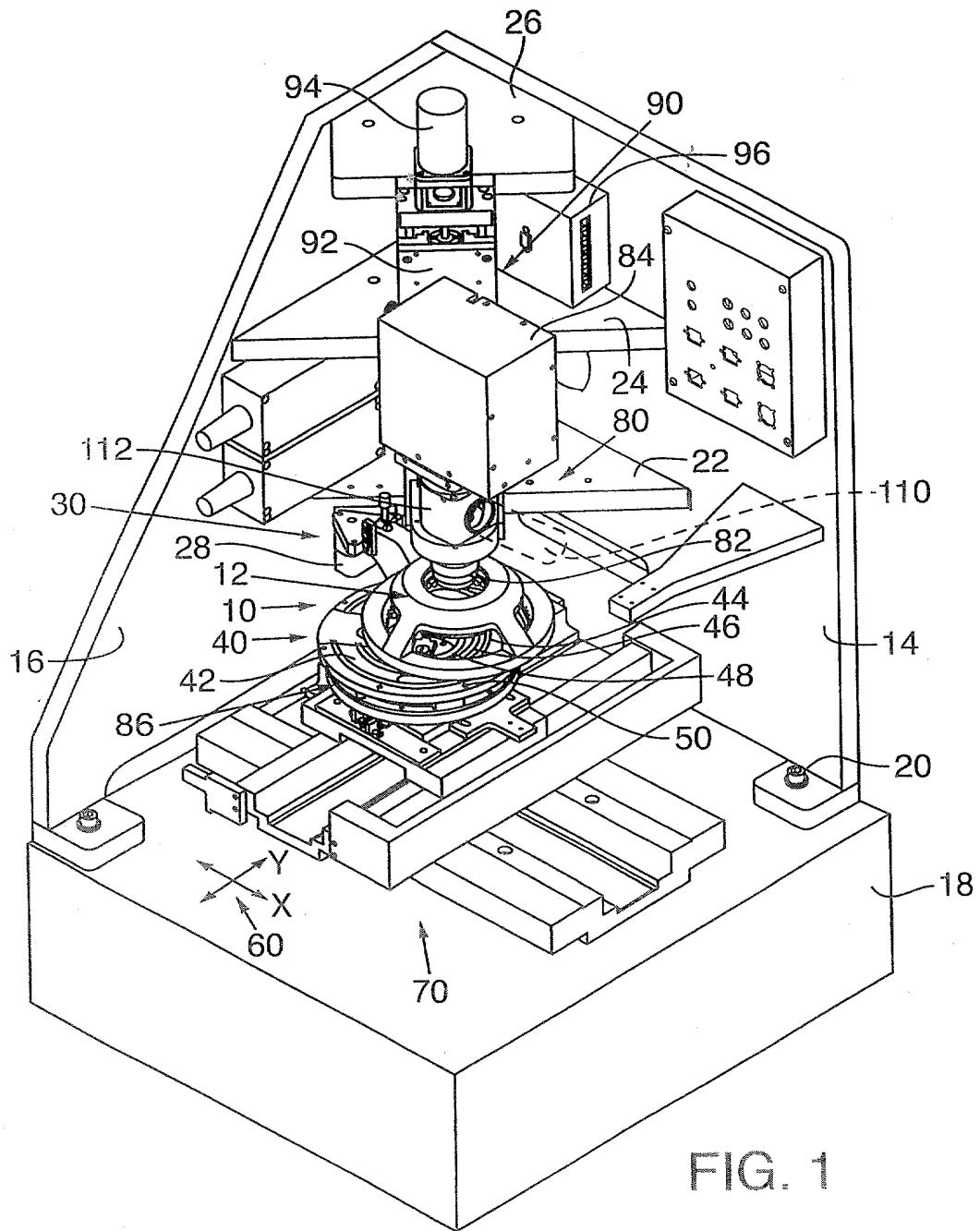


FIG. 1

David P. Petersen
Klarquist Sparkman, LLP
121 SW Salmon
Suite 1600
Portland, Oregon 97204
Telephone: 503/226-7391

Our Ref. No. 6420-57079 1,000,479,800 -021,1102
For: METHOD AND APPARATUS FOR
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Express Mail No. EL 696104540US
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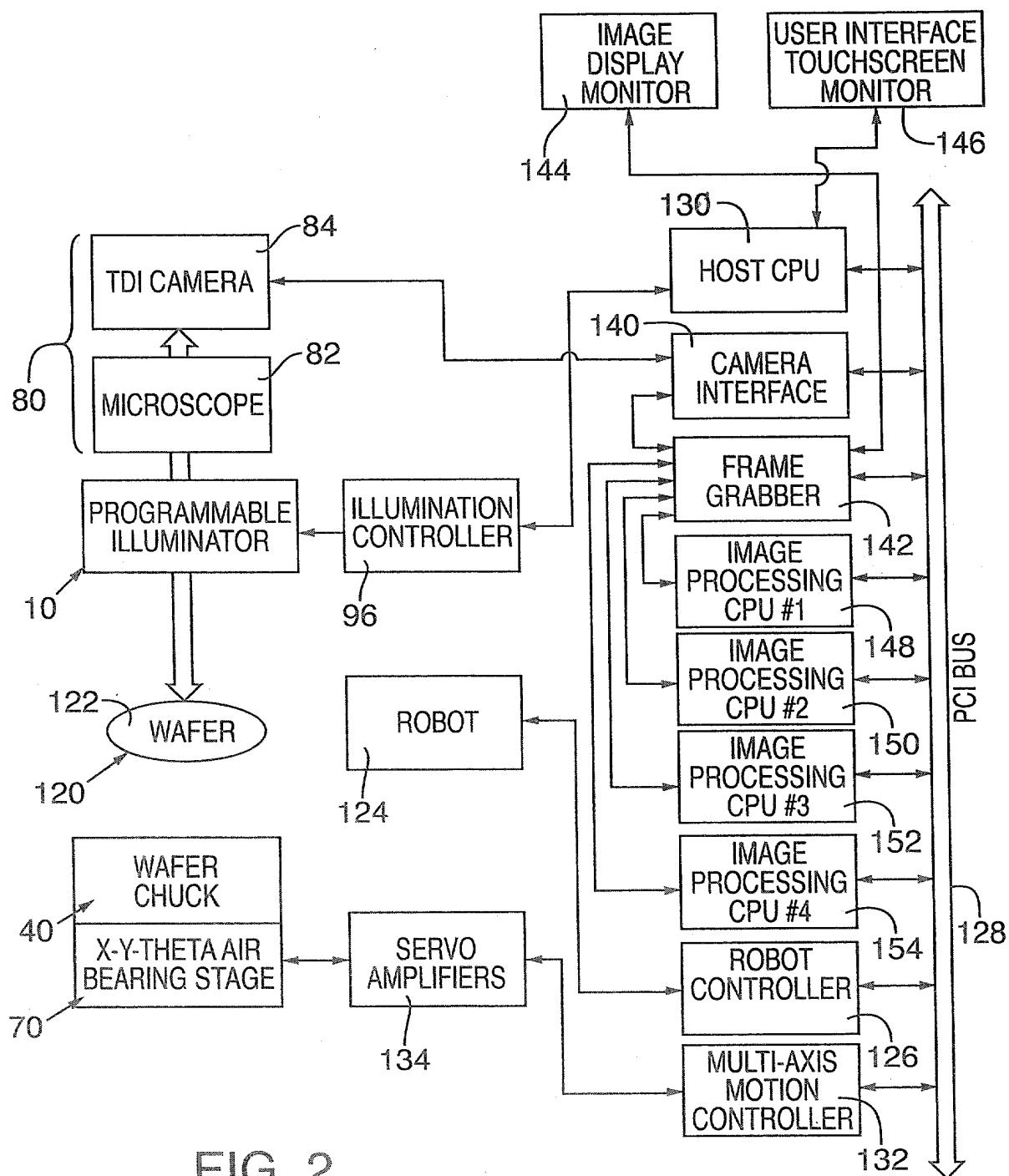


FIG. 2

David P. Petersen
Klarquist Kamman et al
121 SW 5th Street
Suite 1600
Portland, Oregon 97204
Telephone: 503/226-7391

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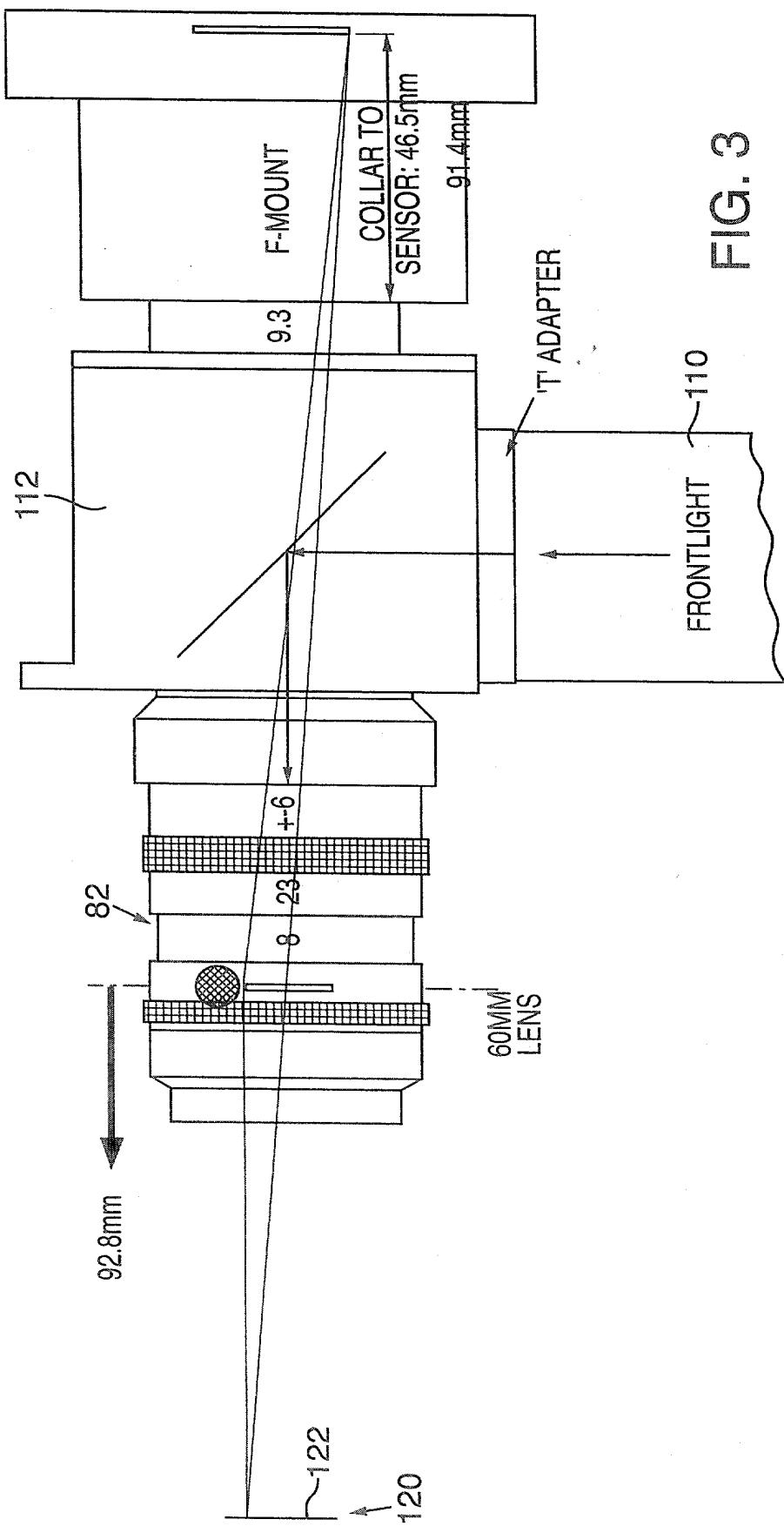


FIG. 3

David P. Petersen
Klarquist Markman et al
121 SW Taylor Street
Suite 1600
Portland, Oregon 97204
Telephone: 503/226-7391

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3,630,477 9/20/00 01/11/02
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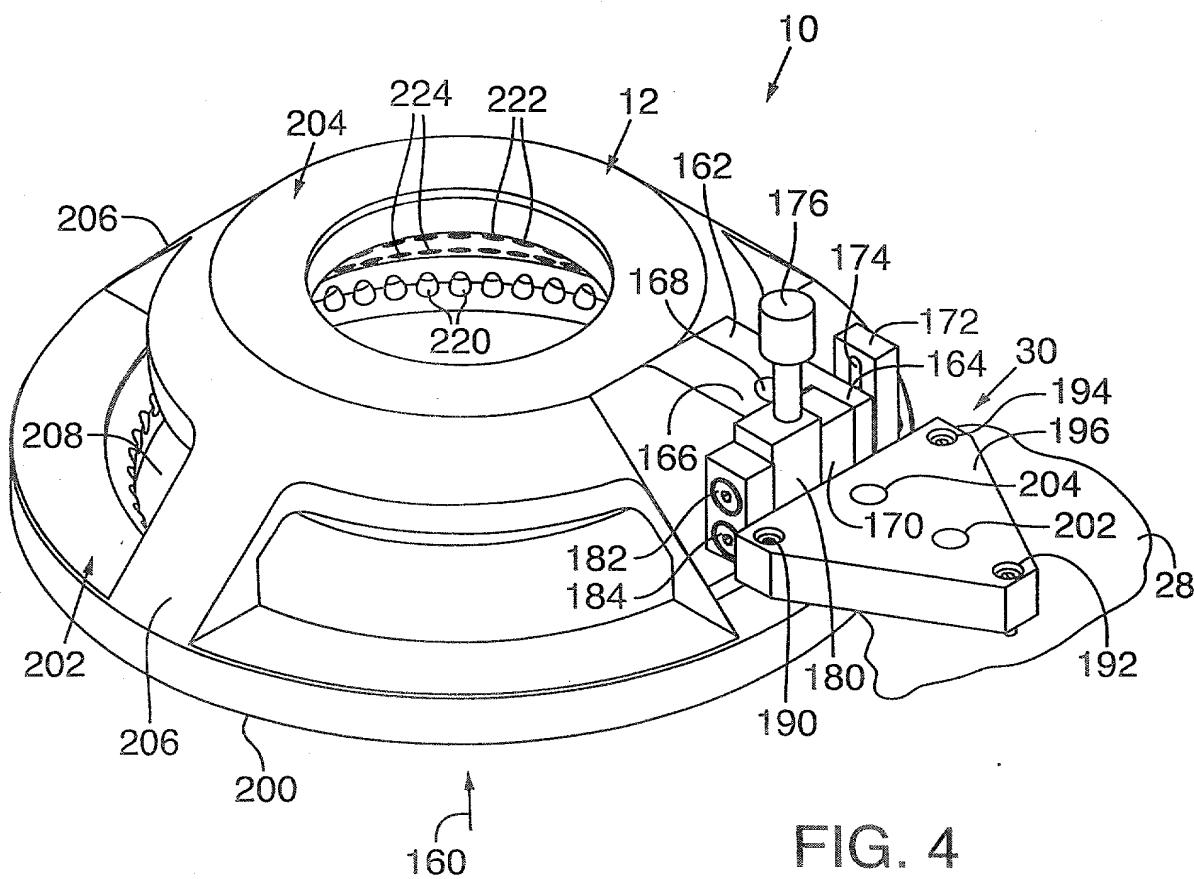


FIG. 4

David P. Petersen
Klarquist Markman et al
121 SW Salmon Street
Suite 1600
Portland, Oregon 97204
Telephone: 503/226-7391

Our Ref. No. 6420-57079
10734729800 204 4 4 0 2
For: METHOD AND APPARATUS
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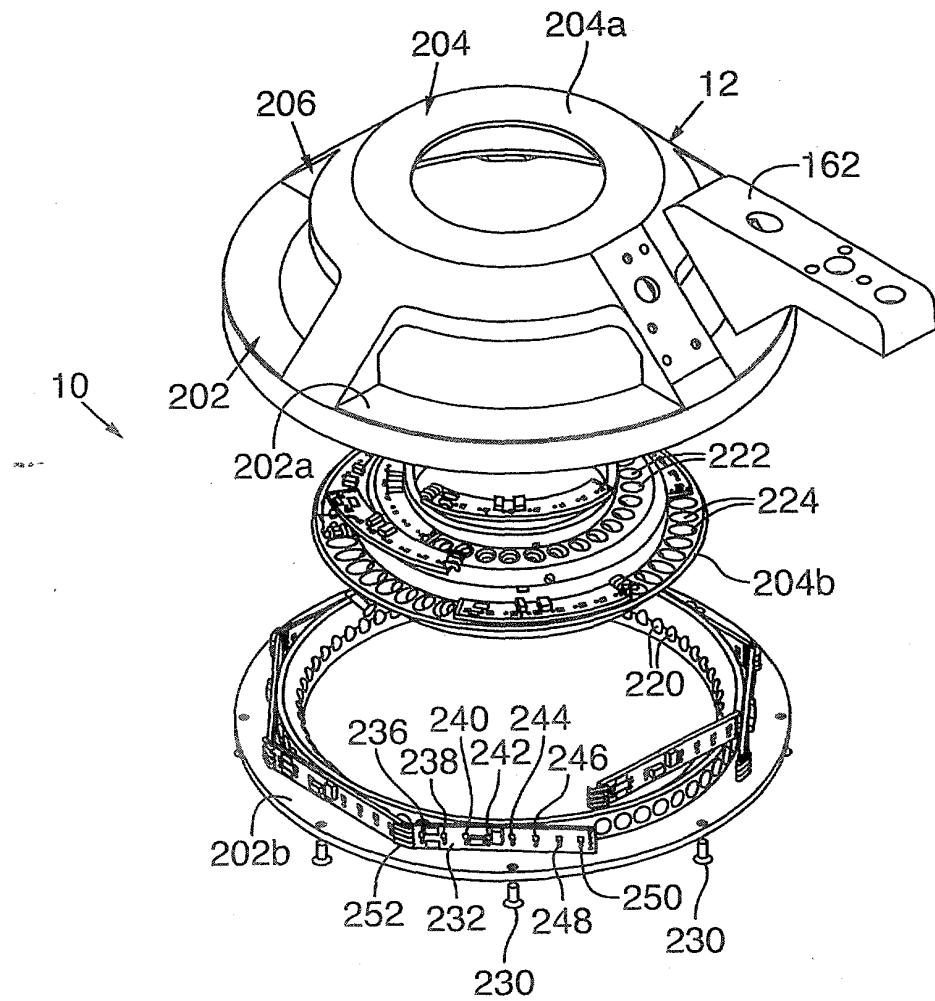


FIG. 5

David P. Petersen
Klarquist Sporre, et al
121 SW Salmon Street
Suite 1600
Portland, Oregon 97204
Telephone: 503/226-7391

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#10047930 - 03141022
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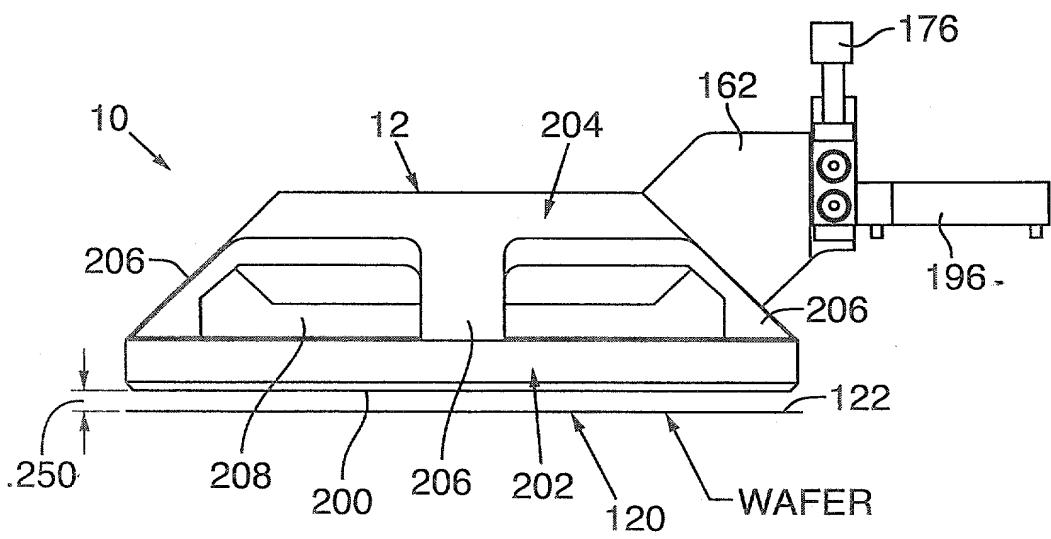


FIG. 6

David P. Petersen
Klarquist Markman et al
121 S. Union Street
Suite 1600
Portland, Oregon 97204
Telephone: 503/226-7391

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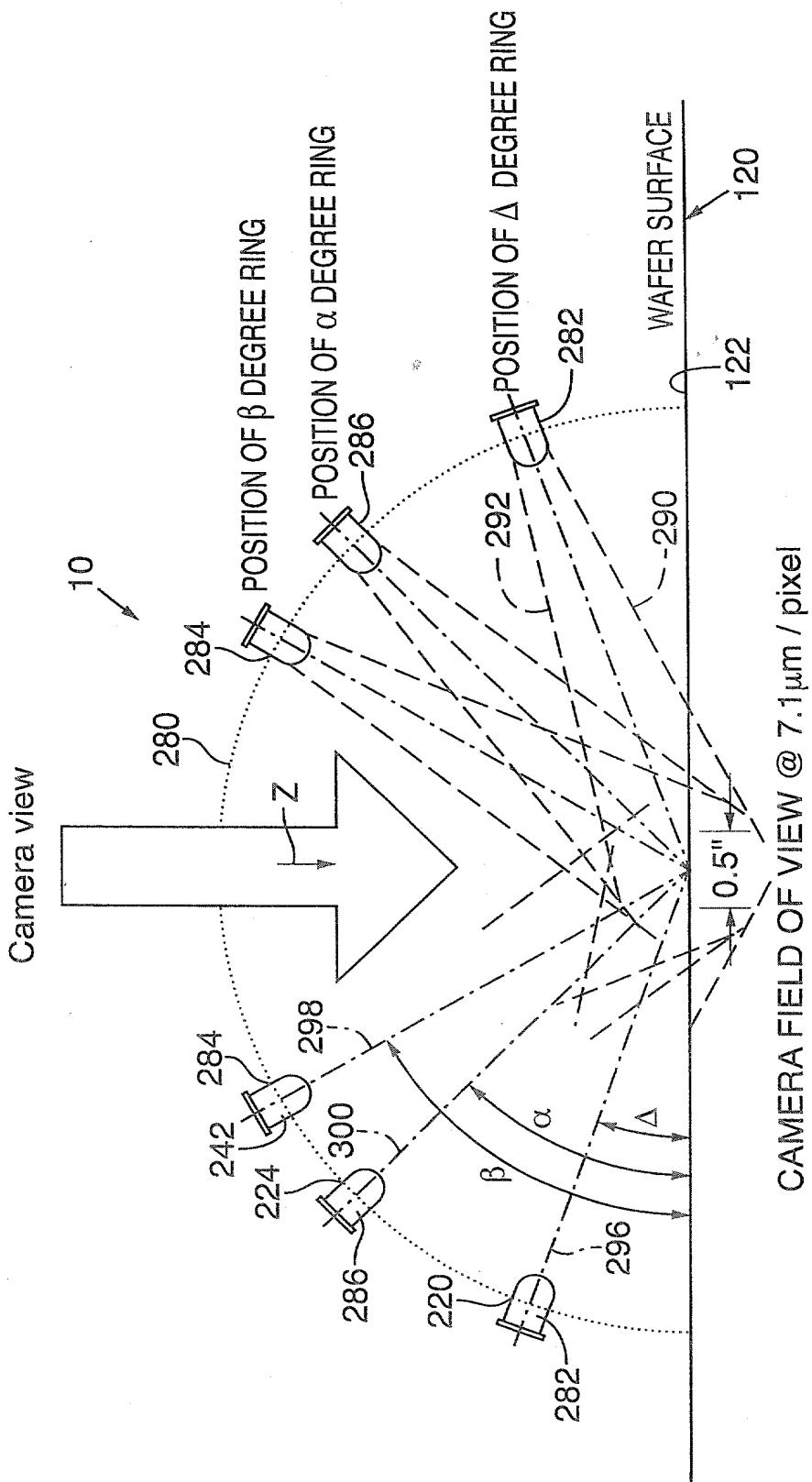


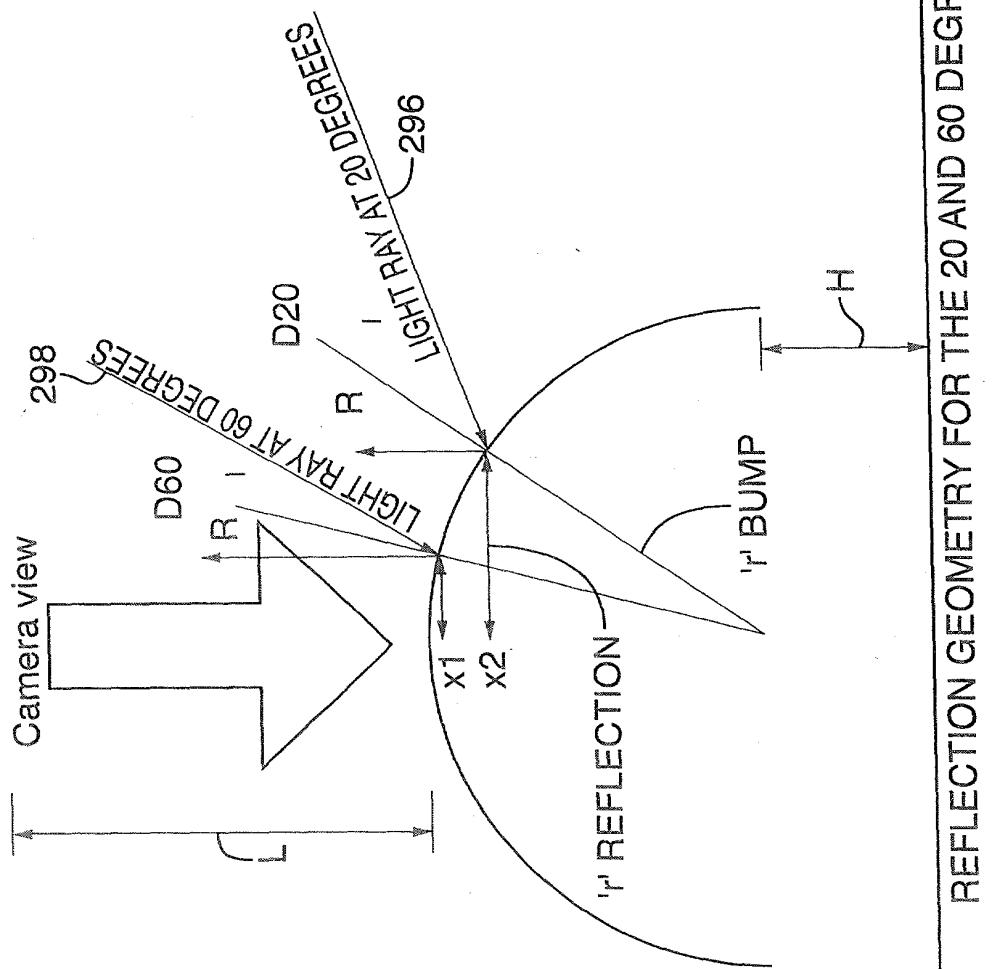
FIG. 7

SIDE VIEW OF RING/WAFER GEOMETRY

David P. Petersen
Klarquist Clark Gaskins et al
121 SW Taylor Street
Suite 1600
Portland, Oregon 97204
Telephone: 503/226-7391

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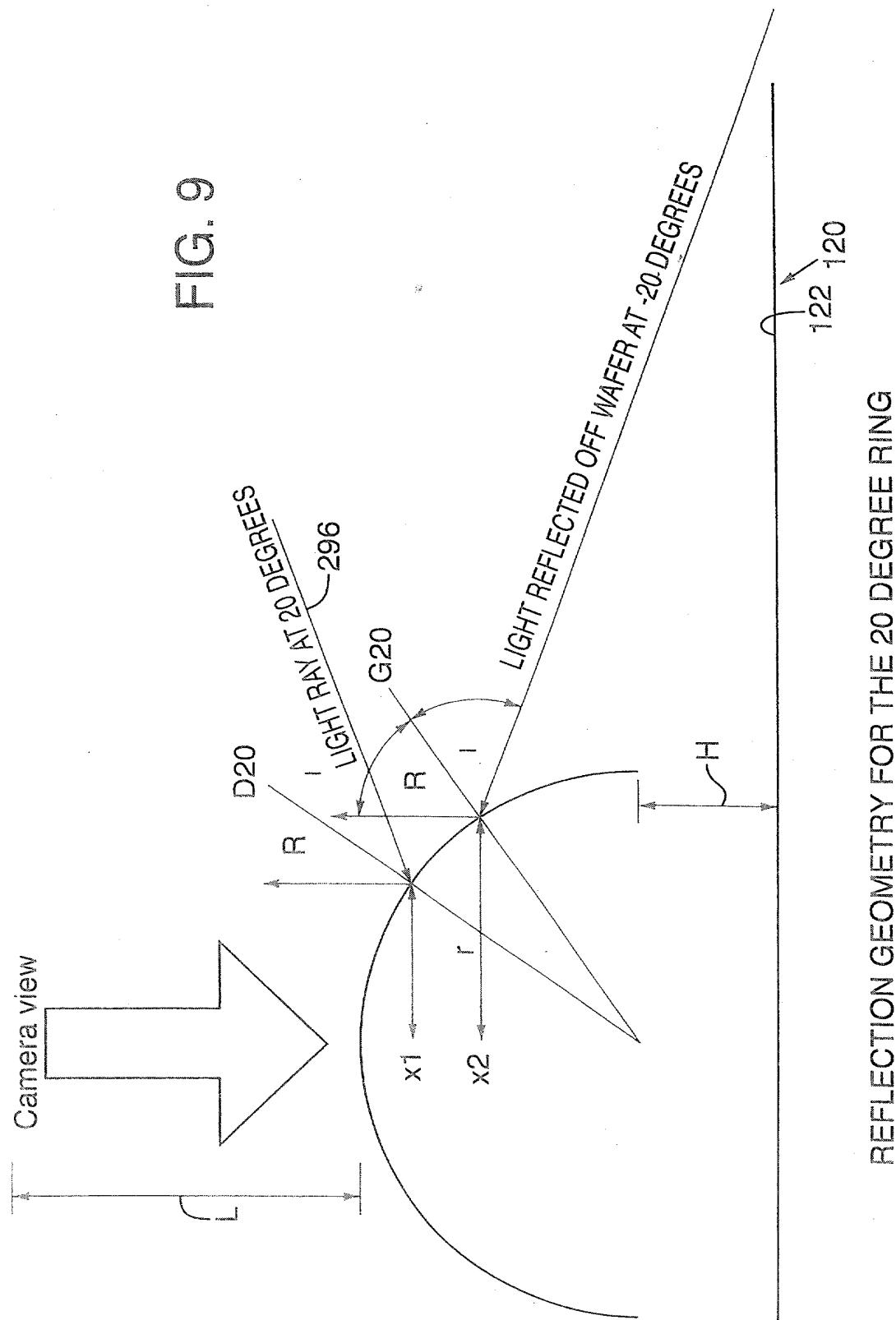
FIG. 8



David P. Petersen
Klarquist Sparkman
121 SW Salmon St
Suite 1600
Portland, Oregon 97204
Telephone: 503/226-7391

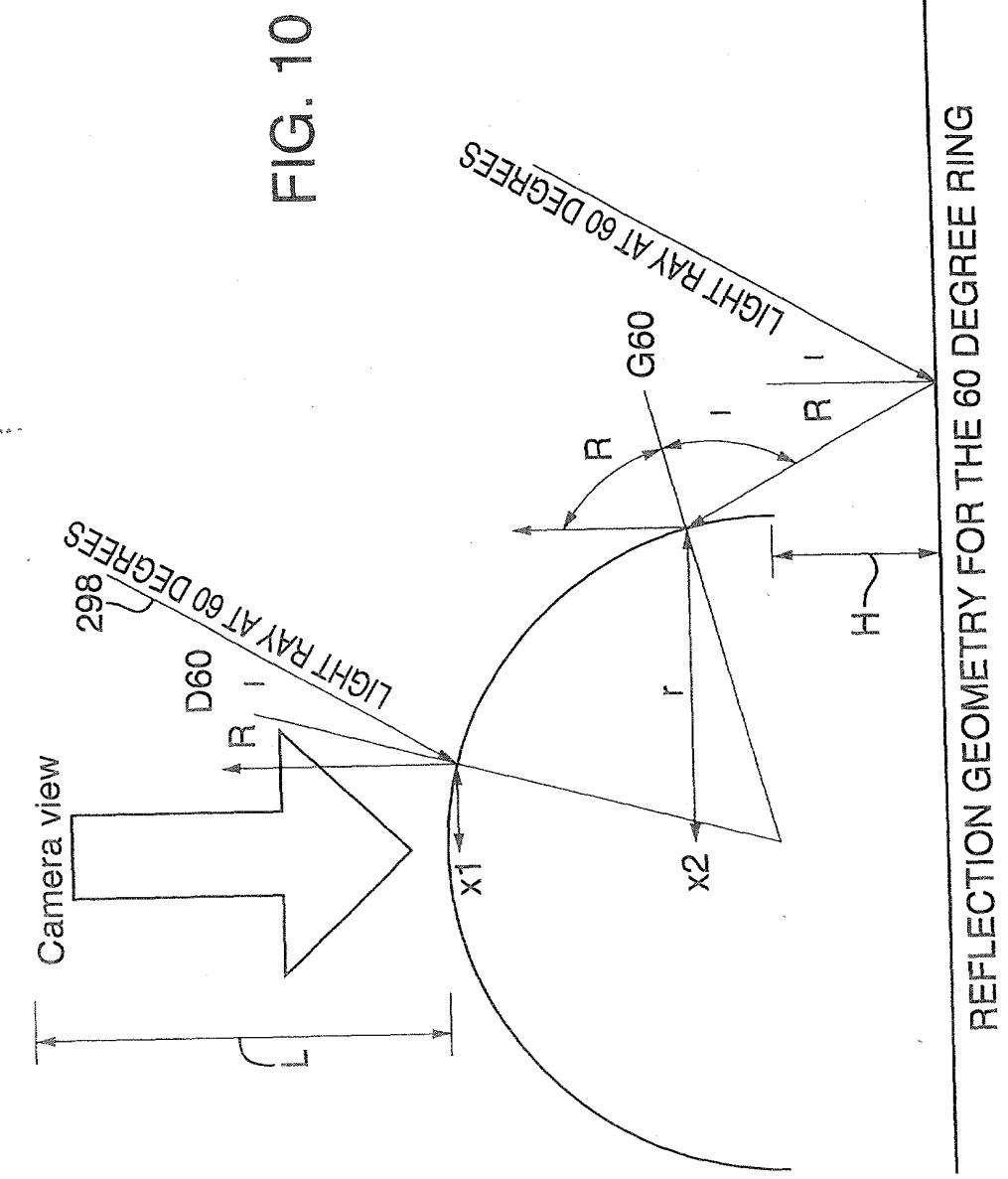
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FIG. 9



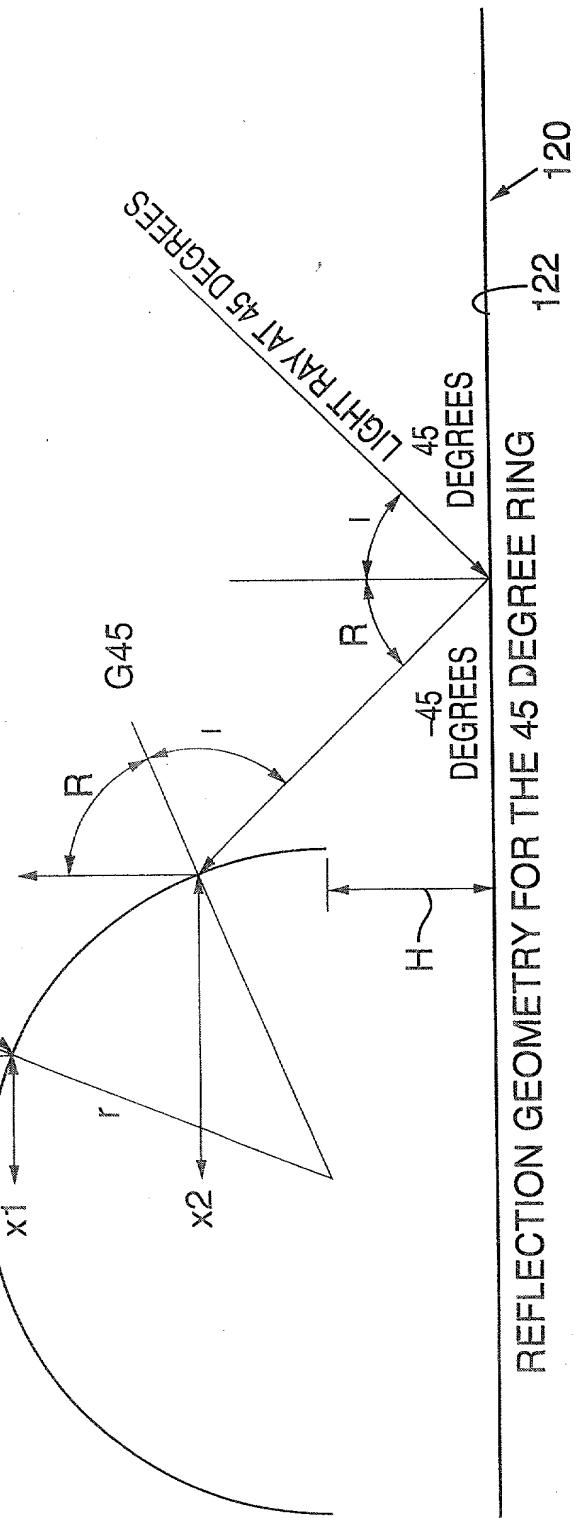
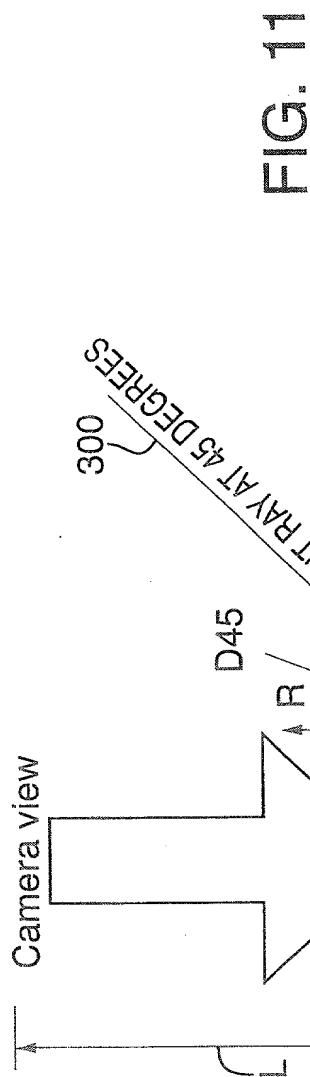
David P. Petersen
Klarquist Sporre et al
121 SW Salmon Street
Suite 1600
Portland, Oregon 97204
Telephone: 503/226-7391

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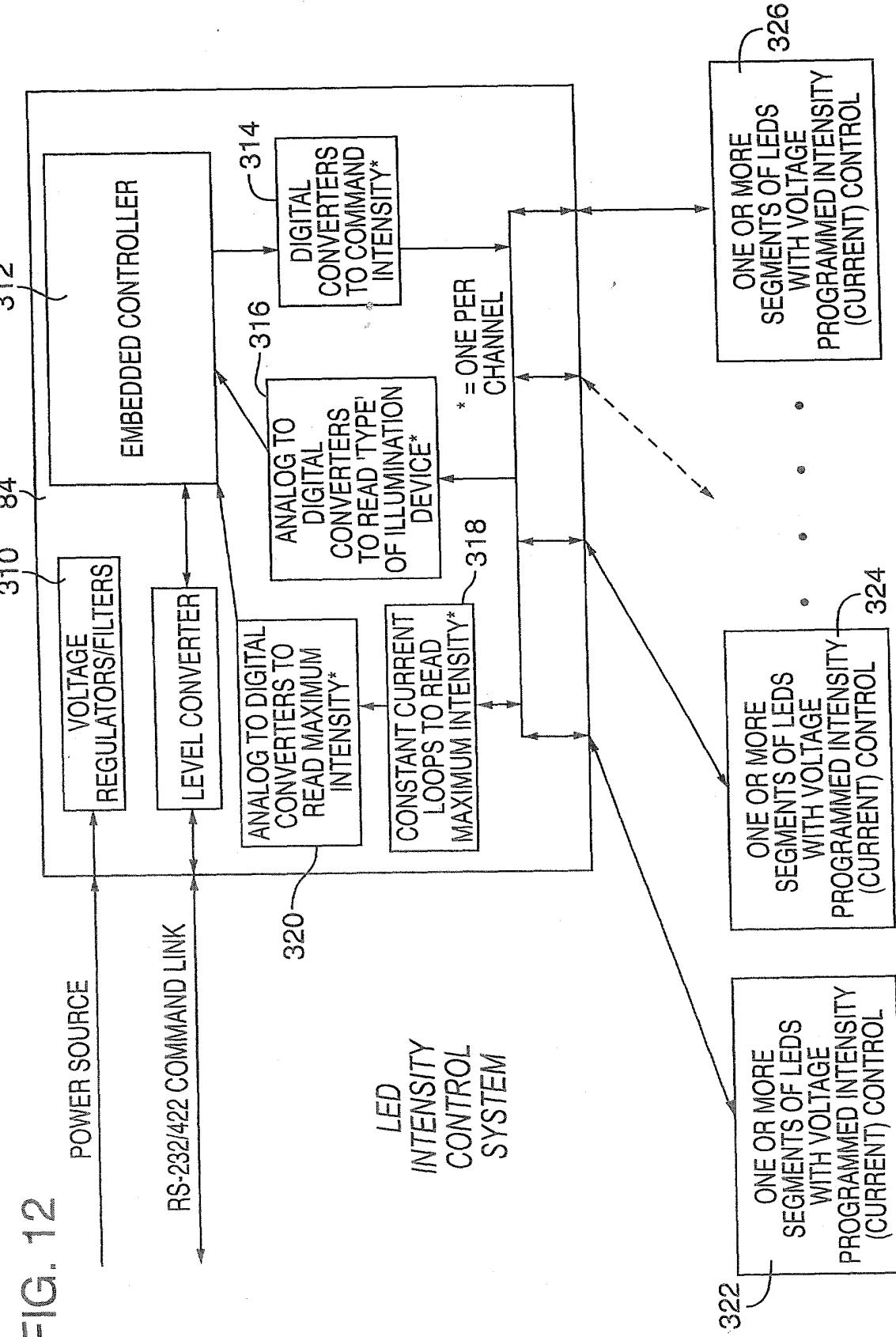
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Klarquist Sporre et al
121 SW Salmon Street
Suite 1600
Portland, Oregon 97204
Telephone: 503/226-7391

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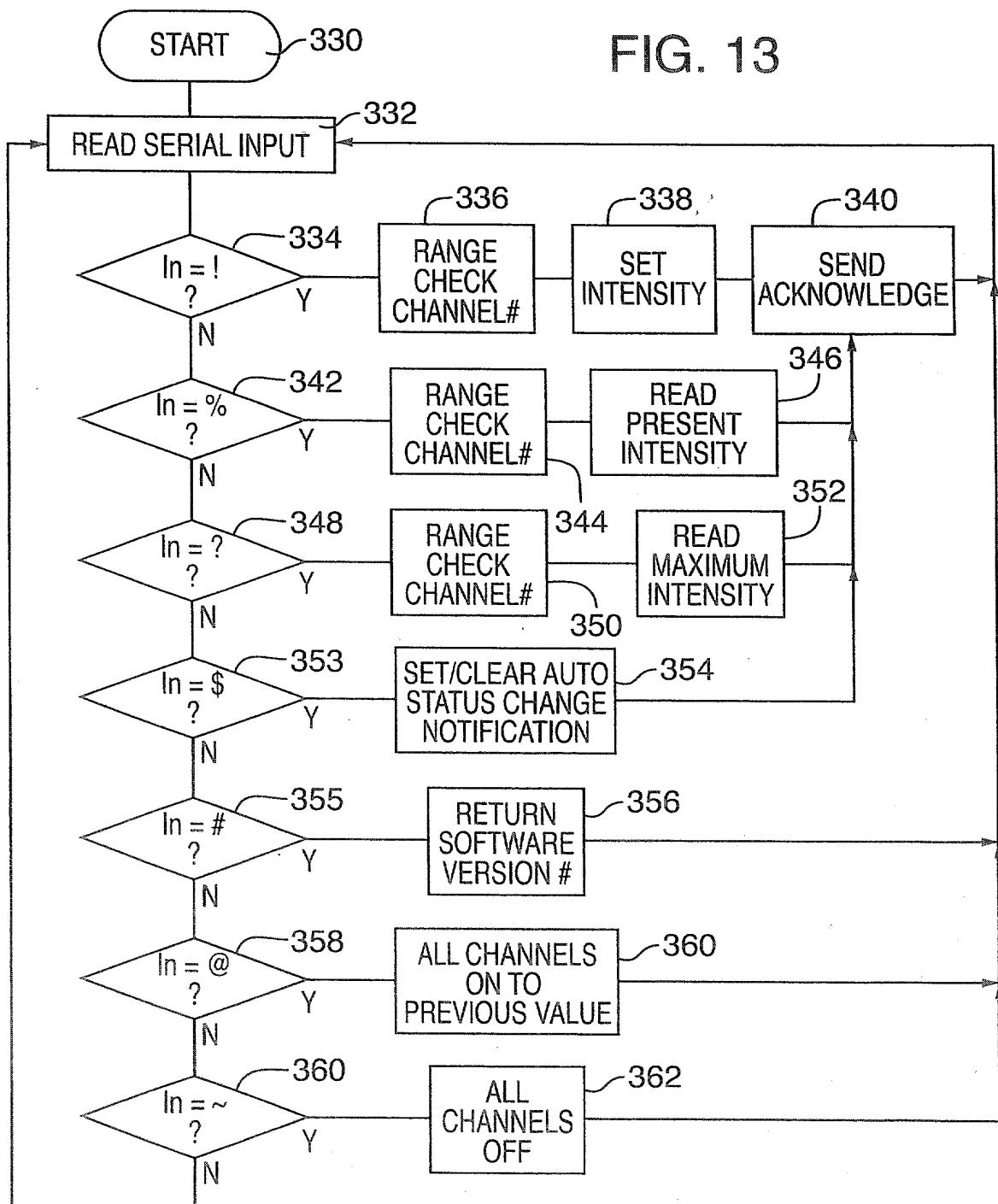
David P. Petersen
Klarquist, Packman et al
121 SW Washington Street
Suite 1600
Portland, Oregon 97204
Telephone: 503/226-7391

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Express Mail No. EL 696104540US
Mailed: January 11, 2002



David P. Petersen
Klarquist Kirkpatrick et al
121 SW 5th Street
Suite 1600
Portland, Oregon 97204
Telephone: 503/226-7391

Our Ref. No. 642057079 0447980 .023.102
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EMBEDDED CONTROLLER PROGRAM FLOW

David P. Petersen
Klarquist Sparkman et al
121 SW Taylor Street
Suite 1600
Portland, Oregon 97204
Telephone: 503/226-7391

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43980 - 011102
For: METHOD AND APPARATUS FOR
GENERATING VALUES
SEMICONDUCTOR WAFER LUMPS
Express Mail No. EL 696104540US
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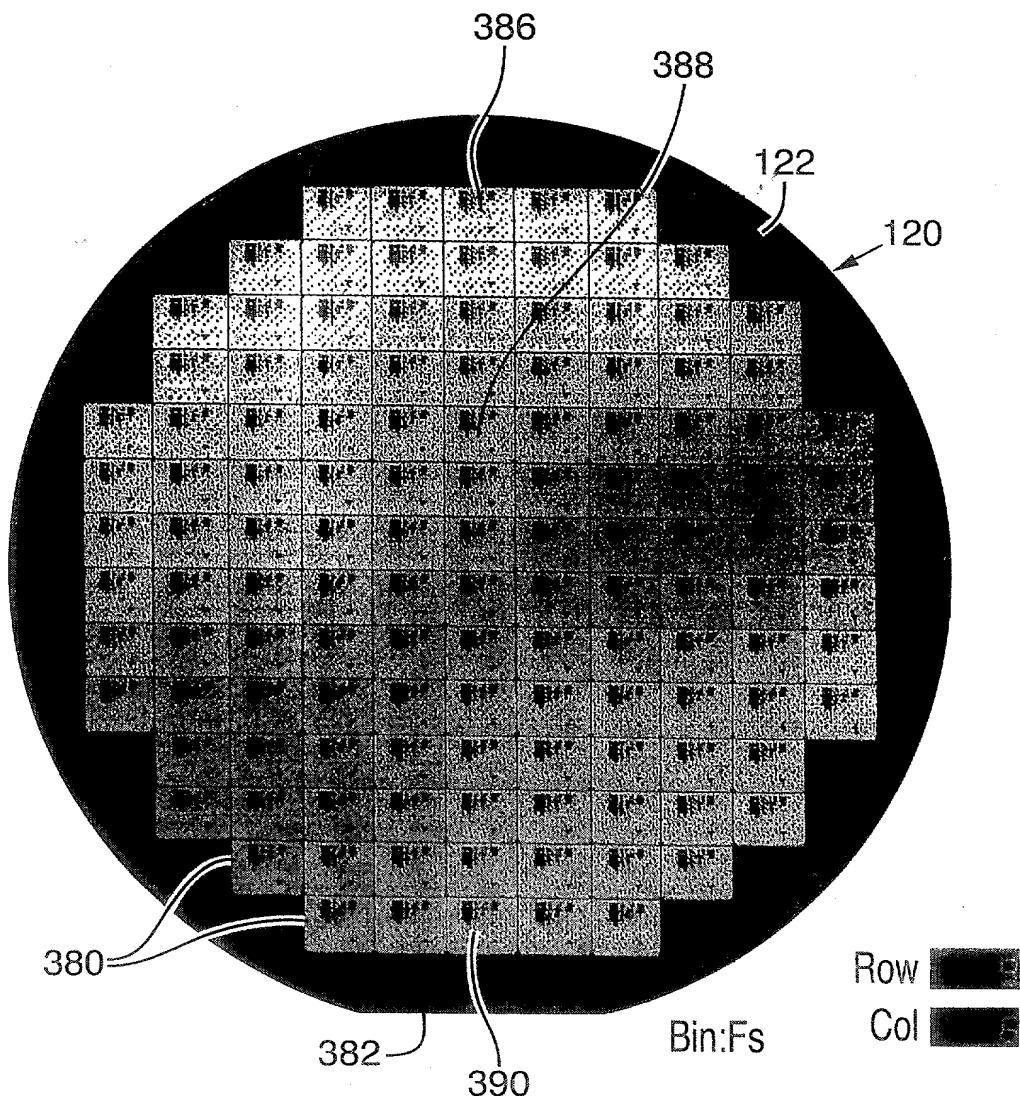
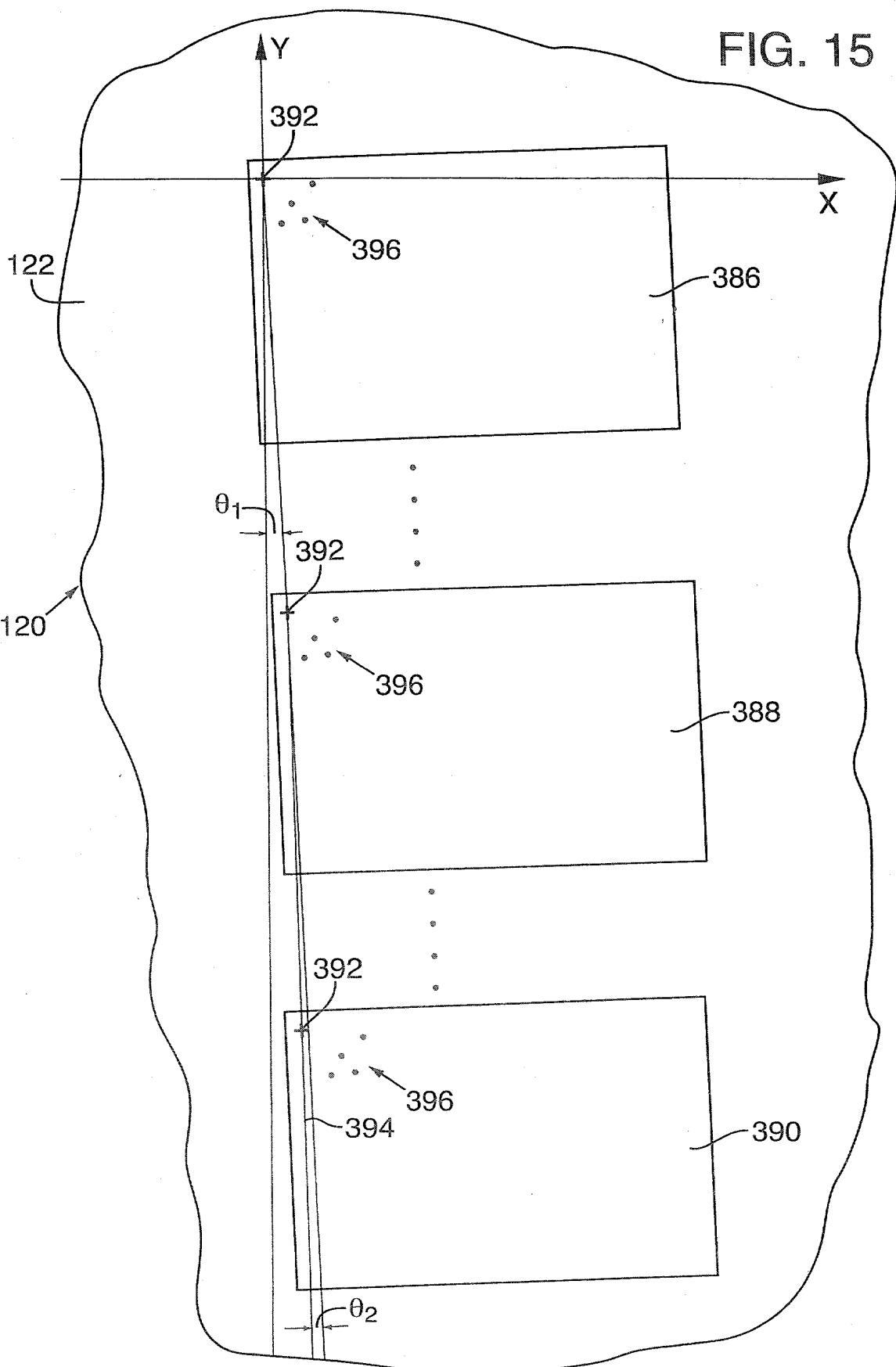


FIG. 14

David P. Petersen
Klarquist Sporre, et al
121 SW Salmon Street
Suite 1600
Portland, Oregon 97204
Telephone: 503/226-7391

Our Ref. No. 6420-570790004-2980 - 0314102
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SEMICONDUCTOR WAFER BURRS
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David P. Petersen
Klarquist Sparkman et al
121 SW Salmon Street
Suite 1000
Portland, Oregon 97204
Telephone: 503/226-7391

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SEMICONDUCTOR WAFER BUMPS
Express Mail No. EL 696104540US
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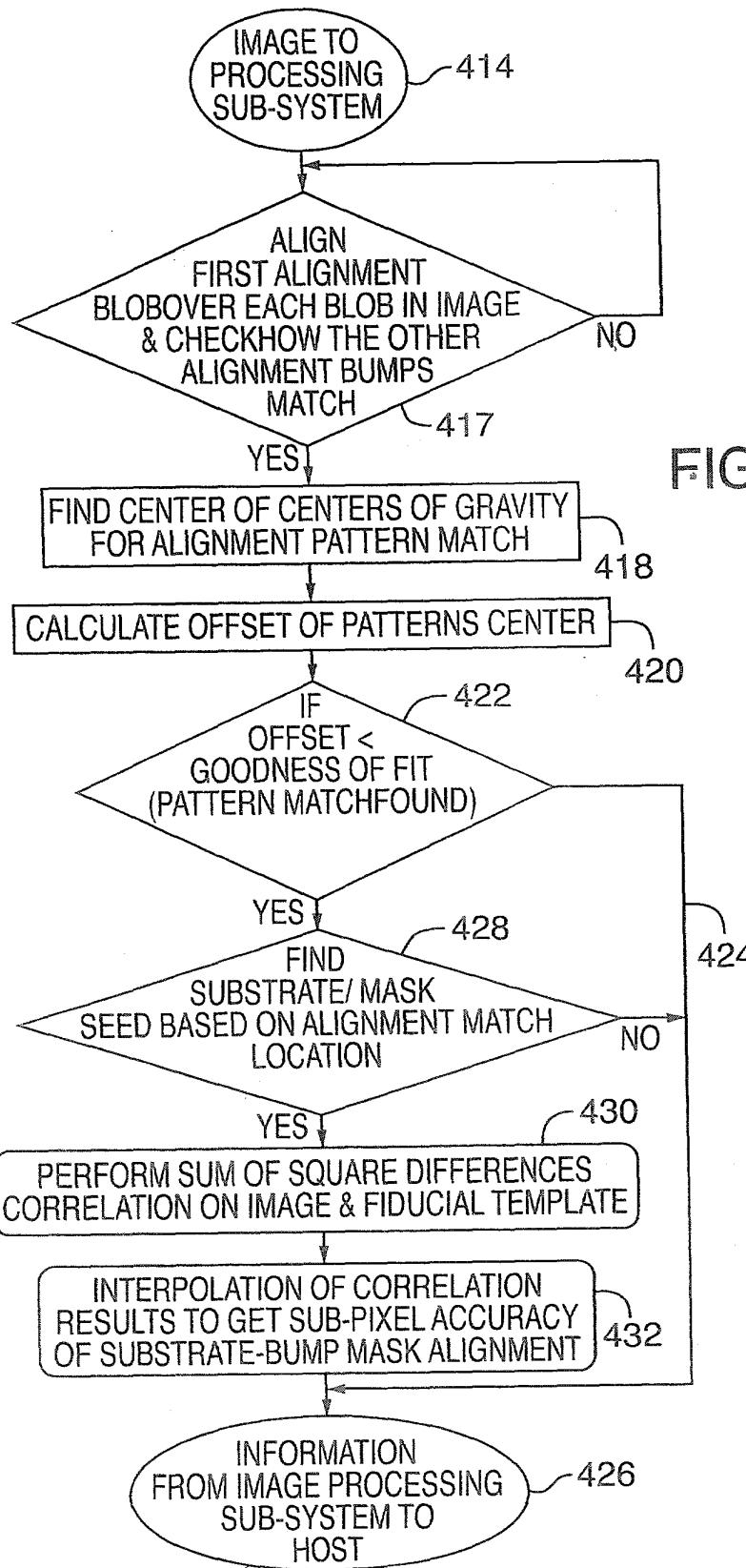
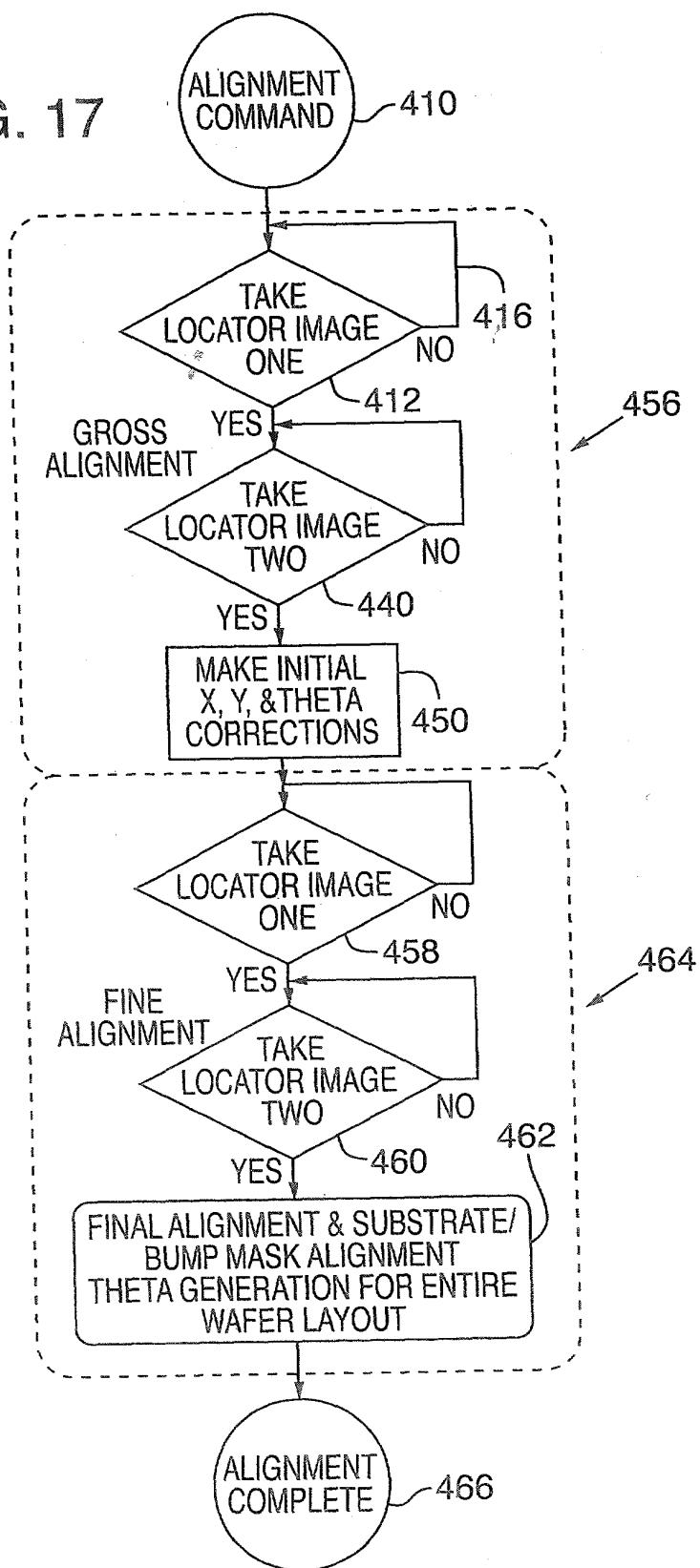


FIG. 16

David P. Petersen
Klarquist Markman et al
121 SW 5th Street
Suite 1600
Portland, Oregon 97204
Telephone: 503/226-7391

Our Ref. No. 6420-570790147980 - 0111102
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FIG. 17



David P. Petersen
Klarene Sparkman et al
121 Salmon Street
Suite 1000
Portland, Oregon 97204
Telephone: 503/226-7391

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Express Mail No. EL 696104540US
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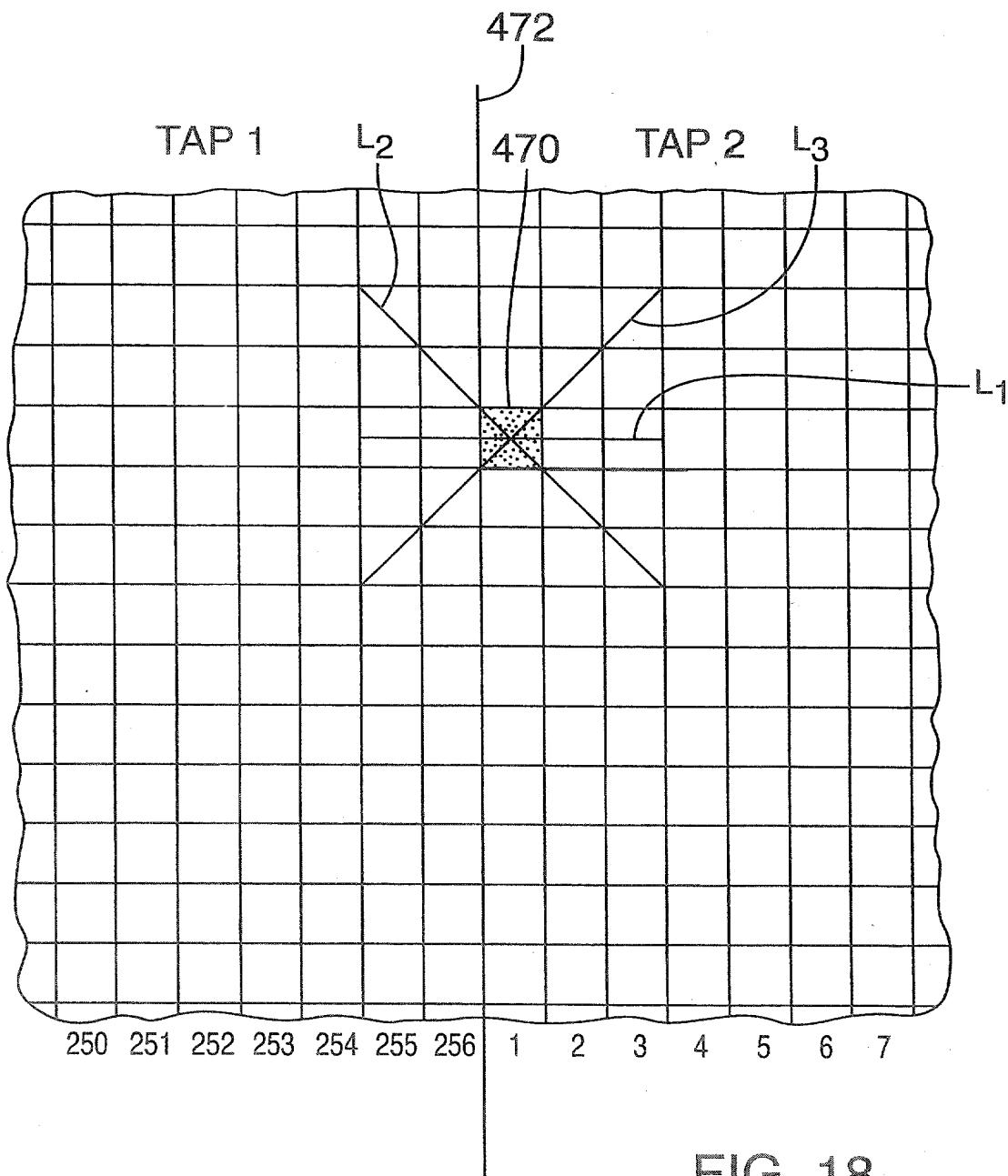


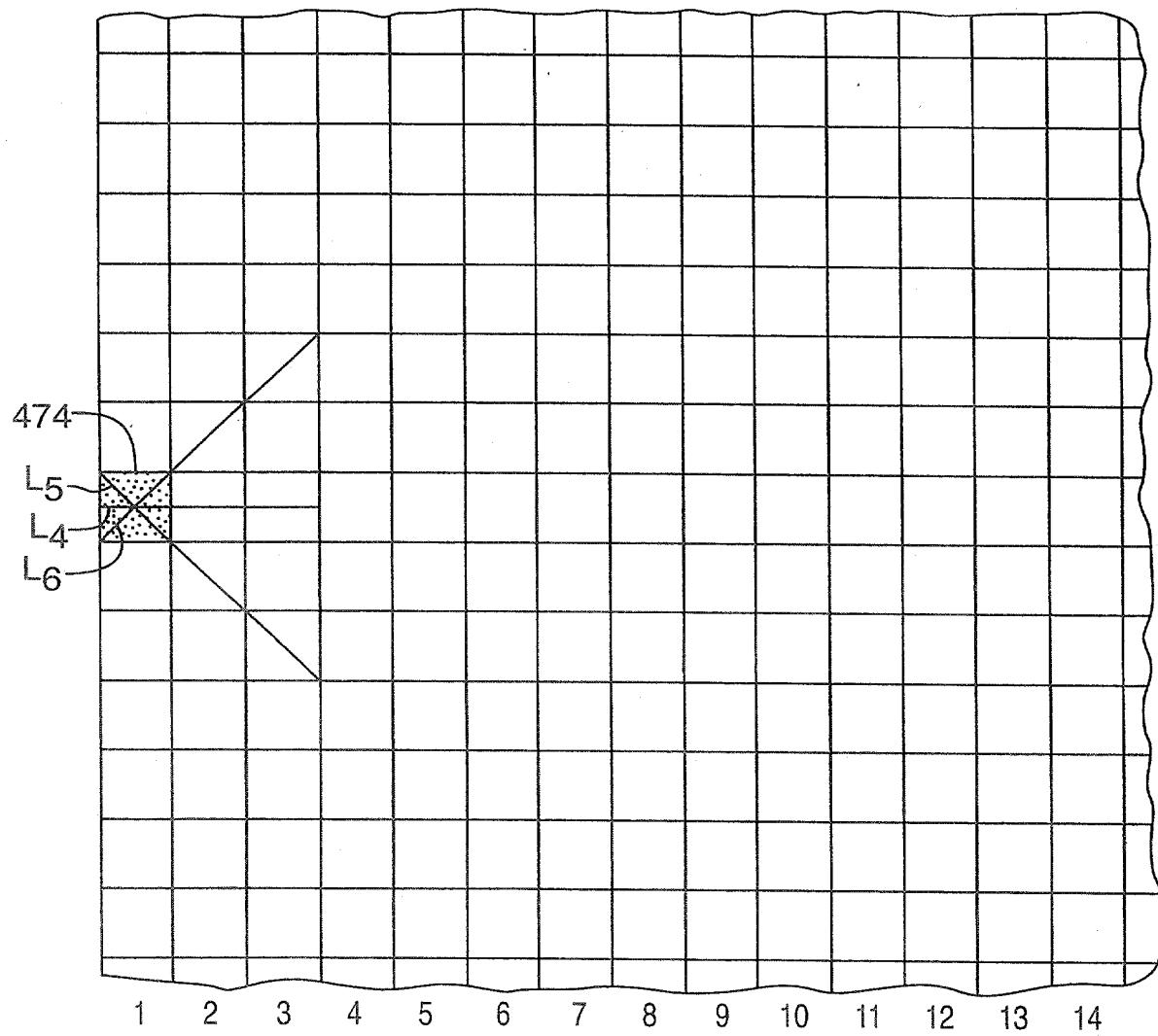
FIG. 18

David P. Petersen
Klarquist Sporrean et al
121 SW Salmon Street
Suite 1600
Portland, Oregon 97204
Telephone: 503/226-7391

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TAP 1

FIG. 19



David P. Petersen
Klarquist Spaldman et al
121 SW 5th Street
Suite 1600
Portland, Oregon 97204
Telephone: 503/226-7391

Our Ref. No. 6420-57079 1047980 011102
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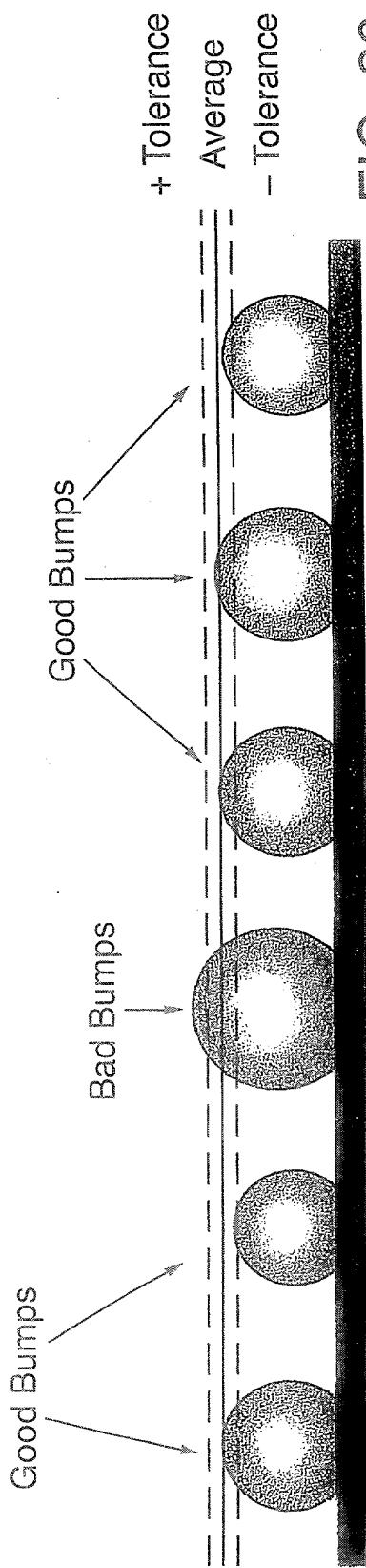


FIG. 20

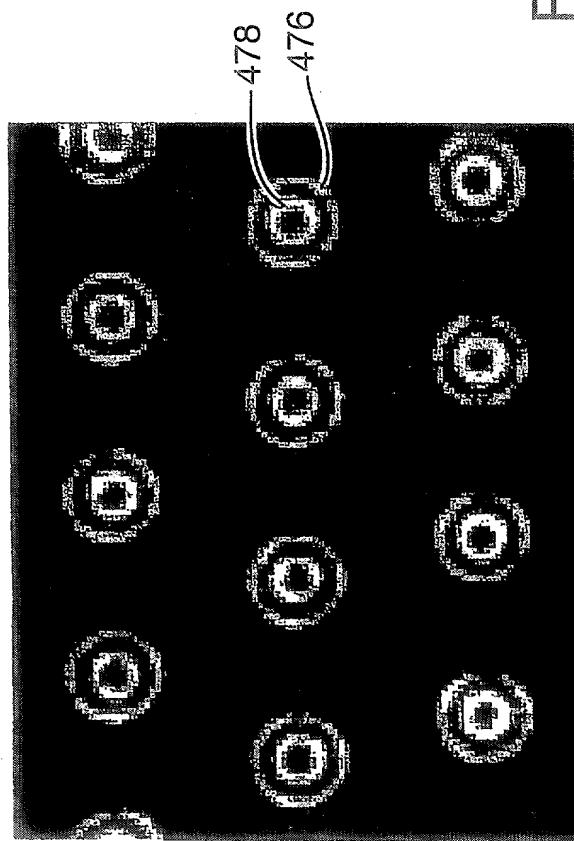


FIG. 21

David P. Petersen
Klarquist, Clarkman et al
121 SW Yamhill Street
Suite 1600
Portland, Oregon 97204
Telephone: 503/226-7391

Our Ref. No. 6420-57079
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GENERATING VALUES . . .
SEMICONDUCTOR WAFER BUMPS
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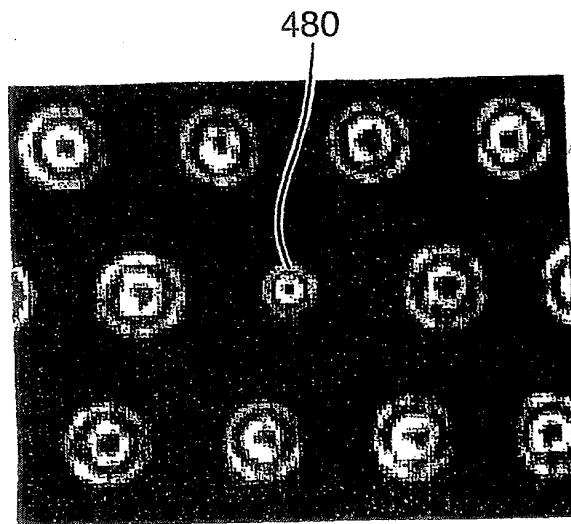


FIG. 22

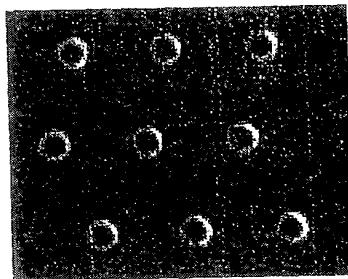


FIG. 23

David P. Petersen
Klarquist et al
121 SW 5th Street
Suite 1600
Portland, Oregon 97204
Telephone: 503/226-7391

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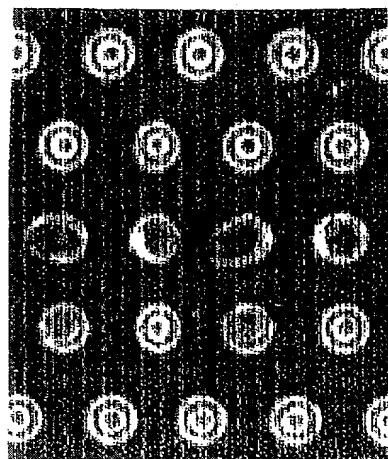


FIG. 24

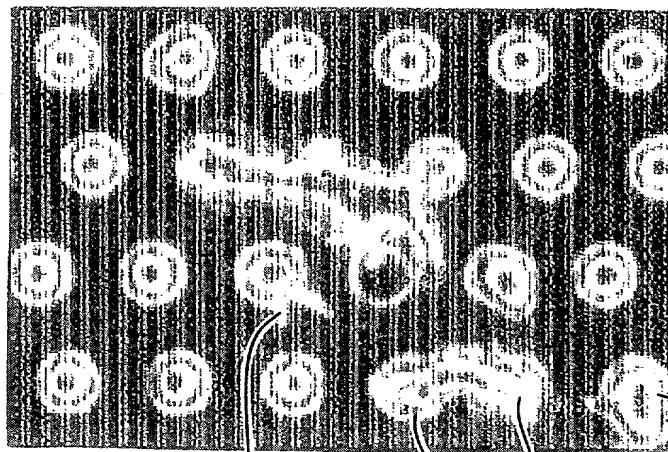


FIG. 25